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AUTHOR	Neylon, Kevin; And Others
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ABSTRACT

The TAFE (Technical and Further Education) National Centre for Research and Development conducted a survey to determine industry needs for quality training in Australia. Interviews were conducted with managers in manufacturing and tourism/hospitality companies throughout Australia, especially with firms with a high reputation. Interview forms were designed to gather data on background information, quality strategy, current and expected quality profile, and quality training needs. Companies interviewed had fewer than 10 to more than 3,000 employees. The survey found that company goals were most often survival, profit, competitiveness, customer service, and the desire to be the best in its particular industry. "Everyone" was the overwhelming response to questions as to who, within the company, was involved in quality improvement; as to methods, consultants, Australian standards, total quality control, Deming's 14 steps, quality circles, and total quality management formed the basis of quality strategies for the companies surveyed. The tourism/hospitality industry did not appear to have well-defined quality strategies, although quality improvement is important to the industry. Most strategies had been in place since 1986. Training packages of various types are planned by all of the companies surveyed, and TAFE involvement appears to be required. The information obtained from the industry survey will be considered in sample curricula being prepared in the following areas: basic trade apprentice--sheet metal working, associate diploma--mechanical engineering, and short course--hospitality. Three figures give a breakdown of survey responses and four charts compare current quality practices with practices two years hence as perceived by the industries surveyed. (KC)

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Summary Report:

Report on Survey of Industry Needs for Quality

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Kevin Neylon
Geoff Hayton
Andrew Inglis

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SUMMARY REPORT:

REPORT ON SURVEY OF INDUSTRY NEEDS FOR QUALITY

Kevin Neylon
Geoff Hayton
Andrew Inglis

This project was commissioned by the National Industry Extension Service, Commonwealth Department of Industry, Technology and Commerce.

Adelaide
1988

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- The NIES Quality Forum - Education Task Force.
- The Australian Organisation for Quality (AOQ, formerly AOQC).
- The Total Quality Management Institute of Australia.
- The industry training committees and councils.
- The departments of TAFE.

SUMMARY

INTRODUCTION

The TAFE National Centre for Research and Development, was commissioned by the Department of Industry, Technology and Commerce (DITAC) to develop curricula on quality. To do this, the Centre conducted an industry survey to determine industry needs for quality training.

The purpose of the survey was to identify the actual requirements of industry and then to develop appropriate curricula for integrating quality training into existing TAFE courses.

Interviews were conducted in the following states:

Manufacturing	-	New South Wales, Victoria and South Australia.
Tourism/hospitality	-	New South Wales, Victoria, South Australia and Queensland.

The persons interviewed were all most co-operative and helpful and appeared, without exception, to support the intent of the survey. Firms with a quality reputation and, wherever possible, persons with expertise in quality, were targeted for interview. All interviews were conducted personally.

Interview forms were designed to gather data in four parts:

PART A: BACKGROUND INFORMATION
PART B: QUALITY STRATEGY
PART C: CURRENT AND EXPECTED QUALITY PROFILE
PART D: QUALITY TRAINING NEEDS.

A summary of the results of the survey follows:

PART A: BACKGROUND INFORMATION

Part A was designed to identify the company, the location, type of industry, number of employees and a contact quality person in each organisation.

Companies interviewed were assured of confidentiality. The number of employees ranged from less than ten to more than 3000. The contact person was, wherever possible, a key quality practitioner.

PART B: QUALITY STRATEGY

Part B of the survey was designed to determine the following information:

a) the company(s) goals;

b) who, within the company, is involved in quality improvement;

c) the company(s) quality strategy;

d) in what way the strategy was developed and organised;

e) how long the strategy has been in practice;

f) why the decision to embark on a quality strategy was taken;

g) the company(s) internal and external customers.

The Company(s) Goals

Survival, profit, competitiveness, customer service and the desire to be the best in its particular industry were the predominant responses in describing the company goals. The general consensus was that, in most companies, goals were known by all personnel.

Who, within the company, is involved in quality improvement

Everyone! was the overwhelming response. Typical comments were, 'Quality is a part of the (Company's) culture', 'Quality is a line management responsibility' and a large New South Wales firm even has quality as a permanent agenda item for senior management meetings.

The company(s) quality strategy

Consultants, Australian standards, total quality control, Deming's fourteen steps, quality circles and total quality management formed the basis of quality strategies for the companies surveyed.

The tourism/hospitality industry, as a general rule, does not appear to have well-defined quality strategies. However, it does appreciate that quality improvement is important to the well-being of the industry.

The way in which the strategy was developed and organised

The following is a representative list of how quality strategies were developed by the manufacturers interviewed:

- working to conform Australian Standards 1821-23;
- establishing an inspection system of quality assurance;
- establishing quality circles;
- initiating total quality control;
- using consultants' advice;
- establishing statistical quality control;
- using just-in-time management strategy;
- setting objectives with periodic reviews;
- maintaining on the job training.

How long the strategy has been in practice

The period of implementation of formal quality strategies ranged from 1981 to 1988. However, 33 per cent of companies commenced in 1986, 15 per cent in 1987 and 10 per cent in both 1983 and 1988. Furthermore, 88 per cent have introduced their quality strategy since 1983.

Why the decision was taken to embark on a quality strategy

Survival appears to be the uppermost response. One company stated that, 'Either we deliver the goods defect-free or the customer will find someone who can'.

Other responses included the need to overcome traditional attitudes, particularly to quality inspection versus production. Customer demands also figured high in the responses.

The company(s) internal and external customers

Of particular interest in this section was the responses to the customers within the company. It is obvious that the external customers are the actual purchasers of the product. Less obvious is the fact recognised by many of the companies that everybody within an organisation is a customer of everybody else.

One company claimed that the customer, '... is the owner of each function and the owner is the function in the chain of functions'.

PART C: CURRENT AND EXPECTED QUALITY PROFILES

Companies were requested to complete a chart depicting the current quality profile and the expectations in two years hence.

The average results are depicted in the Charts C1-C4.

PART D: QUALITY TRAINING NEEDS

Training packages of various types are planned by all of the companies surveyed. 22 per cent of companies will involve senior management in quality training, 23 per cent section managers, 22 per cent process workers while 33 per cent indicated that all employees will be required to undertake formal quality training.

TAFE involvement in quality training appears to be required. 23 per cent of responses indicated a preference for a separate TAFE quality course. 37 per cent asked for quality to be integrated into all TAFE vocational courses. 19 per cent would consider in-house quality training using TAFE lecturers with the proviso that TAFE lecturers be skilled quality practitioners. 8 per cent opted for tertiary institutions to be the providers of quality training while 11 per cent preferred quality organisations to provide the training. There were 2 per cent of companies which conduct their own quality training and did not require the services of other providers. One organisation stated that it considered itself to be a provider of quality training to and for other firms.

The automotive industry, particularly in South Australia, advocated the Automotive Quality Assurance Process (AQAP) approach for quality training.

The question of attitudinal change appeared to dominate the thinking of quality managers and this can be summed up by one large South Australian company with the observation:

> The approach to quality training needs to start with attitudinal change and understanding of basic principles of systems, variation, control and improvement.

FURTHER COMMENTS

Respondents were then given the opportunity to make any other comments, either in relation to the survey, or any other aspect of quality needs and training.

One South Australian company felt that the Federal Government should be further involved in the matter of quality and urged that, 'The Federal Government must call a Quality Summit'.

The question of attitude was again raised in this section of the survey with one company stating, 'Barriers to improvement are attitudes and traditional management practices which encourage inefficiency and poor quality'.

Although TAFE appeared to have the general support of industry one company complained that, in a quality course at a TAFE college,
'The students sensed that TAFE lecturers did not practice what they preached and did not regard students as customers'.
The statement implied that it was the attitude rather than the lack of knowledge of the lecturers involved in the course, that prompted the remark.

A company involved in the hospitality industry felt that secondary school graduates are lacking in '... the skills of geography, history, language and tolerance for other cultures'.

<u>The level of importance of skills in quality training as perceived by industry.</u>

A matrix was used to determine industry's concept of the required skills and their importance in quality training. A grading of 2, 1, 0 was used; 2 for essential, 1 for desirable and 0 for unnecessary.

Because of possible different contexts of the manufacturing and the tourism/hospitality industry two separate matrices were developed. The main difference between the two is that in the tourism/hospitality matrix, some of the 'employee level' categories and quality acronyms were deleted.

Figure 1 depicts the percentage level of the importance of quality skills as perceived by the manufacturing industry. The tourism/hospitality response is shown in Figure 2 and a comparison of the two industries appears as Figure 3.

WHAT HAPPENS NOW?

The information obtained from the industry survey will be considered in sample curricula being prepared in the following areas:

1. Basic trade apprentice - sheetmetalworking
2. Associate diploma - mechanical engineering
3. Short course - hospitality

Basic trade apprentice

Although the basic trade apprentice quality component is being developed for the sheetmetalworking trade, the syllabus will be adaptable for any apprentice course.

The syllabus will be designed to be fully integrated into a competency-based, project centred course. Alternatively, it may also be used as a stand alone subject on quality.

Associate diploma - mechanical engineering

It is proposed to develop a fully-integrated quality component into each of the subjects in the associate diploma course. For the purpose of the model, one subject will be selected as an example of the integration of quality into the course.

A separate stand alone subject will also be developed and it will be suggested that it be a core subject for the associate diploma.

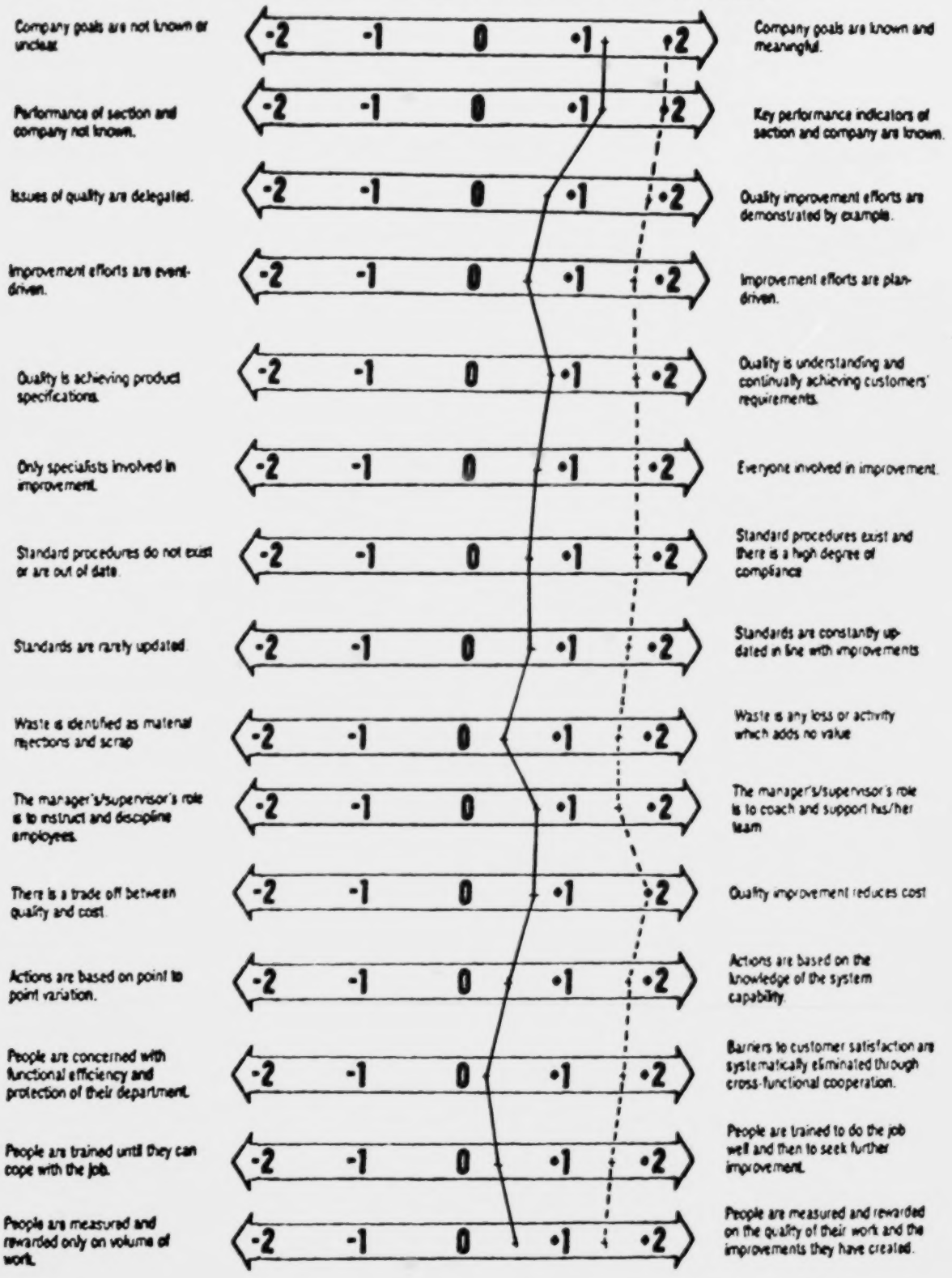
Short course - hospitality

One of the many short courses in hospitality training will be used as a model for the integration of quality into the hospitality industry.

In addition to the above, training packages consisting of videos and workbooks are being produced. These packages will be of value in the introduction of quality training into TAFE colleges throughout Australia.

Workshops for TAFE staff in each state will be conducted to augment the training packages.

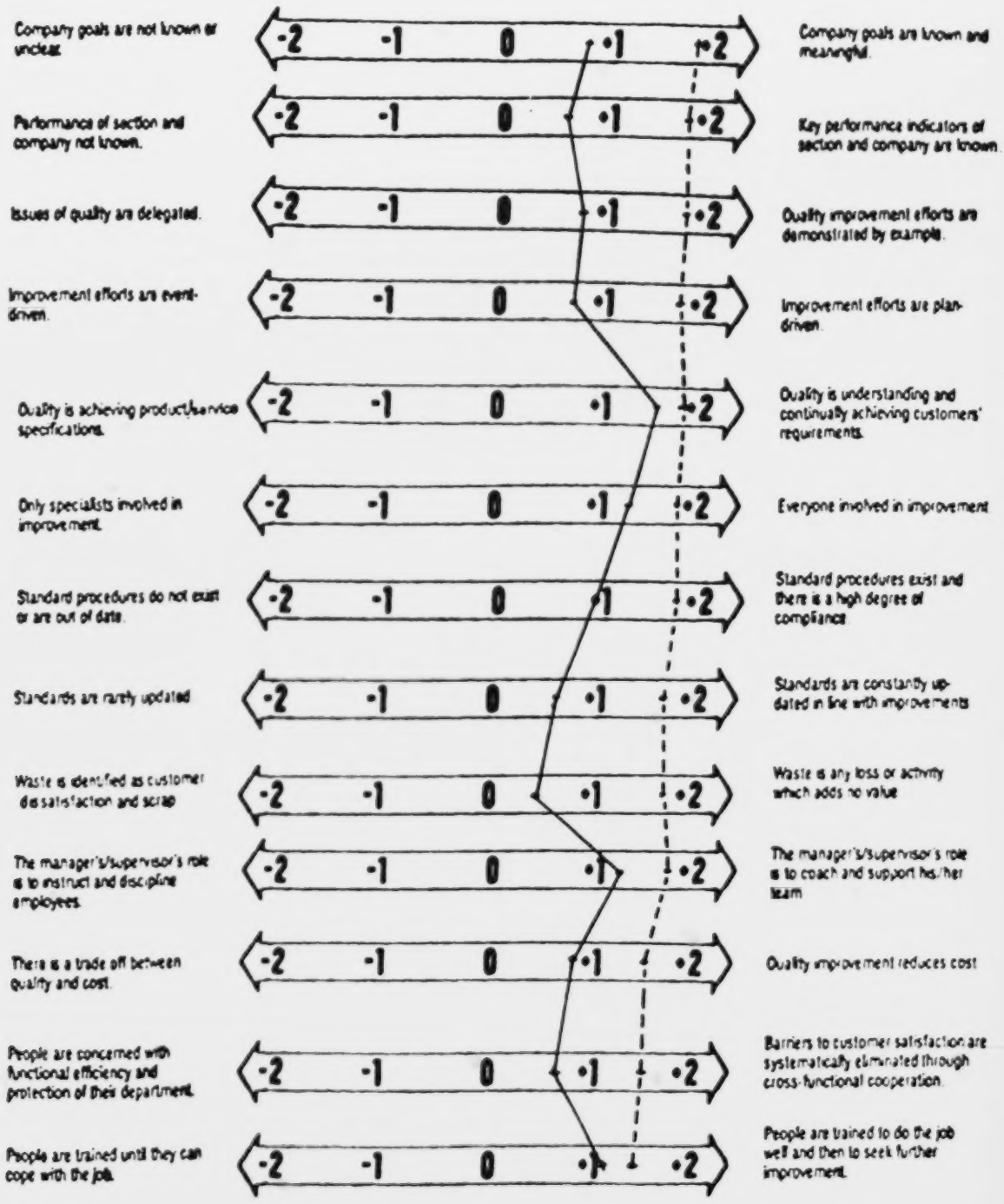
CHART C1: COMPARISON OF THE AVERAGE QUALITY PRACTICES, CURRENT AND TWO YEARS HENCE, AS PERCEIVED BY THE MANUFACTURING INDUSTRY IN ALL STATES SURVEYED.


Company goals are not known or unclear.
-2 -1 0 +1 +2
Company goals are known and meaningful.
Performance of section and company not known.
-2 -1 0 +1 +2
Key performance indicators of section and company are known.
Issues of quality are delegated.
-2 -1 0 +1 +2
Quality improvement efforts are demonstrated by example.
Improvement efforts are event-driven.
-2 -1 0 +1 +2
Improvement efforts are plan-driven.
Quality is achieving product specifications.
-2 -1 0 +1 +2
Quality is understanding and continually achieving customers' requirements.
Only specialists involved in improvement.
-2 -1 0 +1 +2
Everyone involved in improvement.
Standard procedures do not exist or are out of date.
-2 -1 0 +1 +2
Standard procedures exist and there is a high degree of compliance
Standards are rarely updated.
-2 -1 0 +1 +2
Standards are constantly up-dated in line with improvements
Waste is identified as material rejections and scrap
-2 -1 0 +1 +2
Waste is any loss or activity which adds no value
The manager's/supervisor's role is to instruct and discipline employees.
-2 -1 0 +1 +2
The manager's/supervisor's role is to coach and support his/her team
There is a trade off between quality and cost.
-2 -1 0 +1 +2
Quality improvement reduces cost
Actions are based on point to point variation.
-2 -1 0 +1 +2
Actions are based on the knowledge of the system capability
People are concerned with functional efficiency and protection of their department.
-2 -1 0 +1 +2
Barriers to customer satisfaction are systematically eliminated through cross-functional cooperation.
People are trained until they can cope with the job.
-2 -1 0 +1 +2
People are trained to do the job well and then to seek further improvement.
People are measured and rewarded only on volume of work.
-2 -1 0 +1 +2
People are measured and rewarded on the quality of their work and the improvements they have created.

CURRENT _____ TWO YEARS - - - - - - - - -

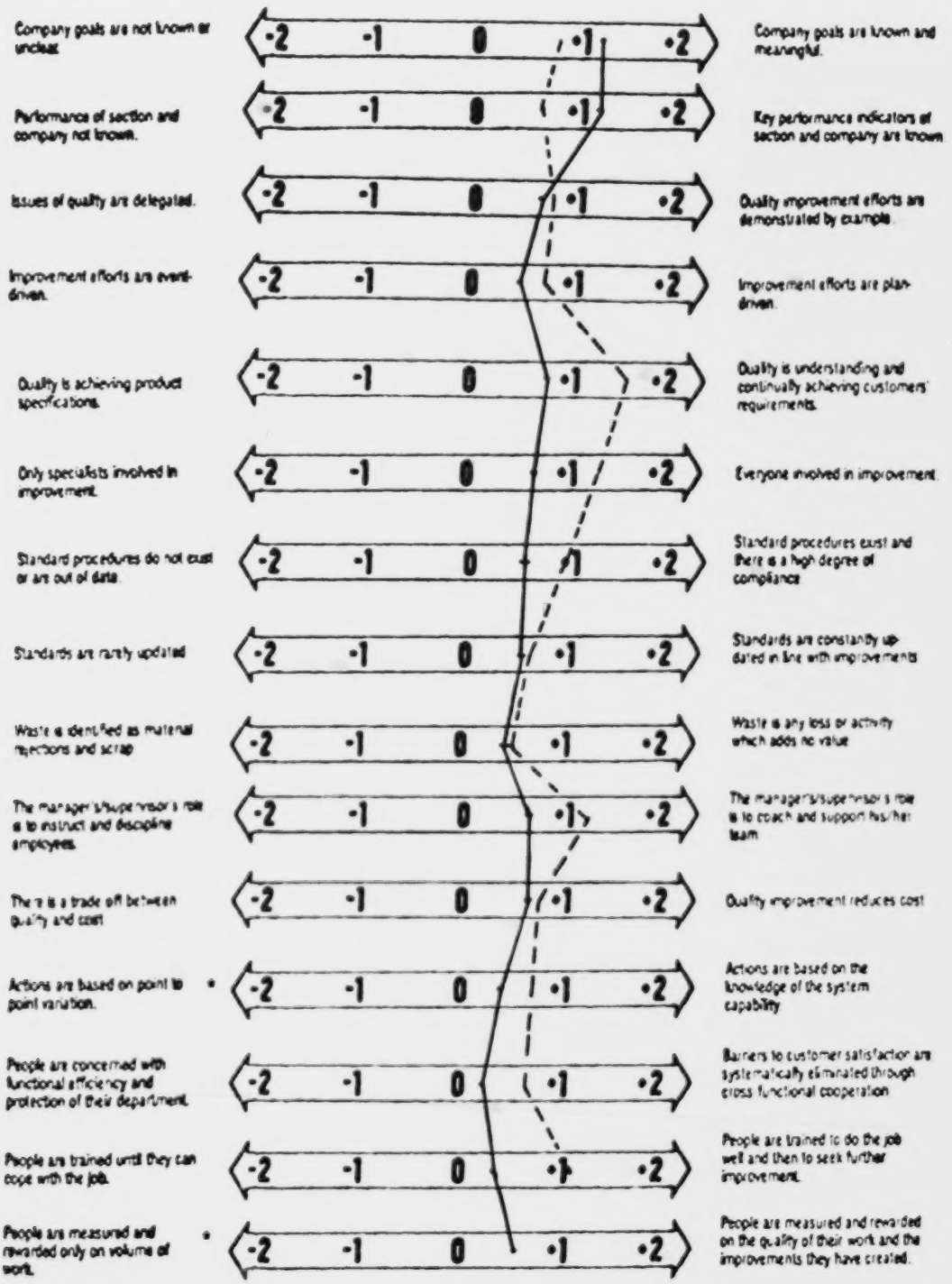
8

CHART C2: COMPARISON OF THE AVERAGE QUALITY PRACTICES, CURRENT AND TWO YEARS HENCE, AS PERCEIVED BY THE TOURISM/HOSPITALITY INDUSTRY IN ALL STAGES SURVEYED.


Company goals are not known or unclear.
-2 -1 0 +1 +2
Company goals are known and meaningful.
Performance of section and company not known.
-2 -1 0 +1 +2
Key performance indicators of section and company are known.
Issues of quality are delegated.
-2 -1 0 +1 +2
Quality improvement efforts are demonstrated by example.
Improvement efforts are event-driven.
-2 -1 0 +1 +2
Improvement efforts are plan-driven.
Quality is achieving product/service specifications.
-2 -1 0 +1 +2
Quality is understanding and continually achieving customers' requirements.
Only specialists involved in improvement.
-2 -1 0 +1 +2
Everyone involved in improvement.
Standard procedures do not exist or are out of date.
-2 -1 0 +1 +2
Standard procedures exist and there is a high degree of compliance.
Standards are rarely updated.
-2 -1 0 +1 +2
Standards are constantly up-dated in line with improvements.
Waste is identified as customer dissatisfaction and scrap.
-2 -1 0 +1 +2
Waste is any loss or activity which adds no value.
The manager's/supervisor's role is to instruct and discipline employees.
-2 -1 0 +1 +2
The manager's/supervisor's role is to coach and support his/her team.
There is a trade off between quality and cost.
-2 -1 0 +1 +2
Quality improvement reduces cost.
People are concerned with functional efficiency and protection of their department.
-2 -1 0 +1 +2
Barriers to customer satisfaction are systematically eliminated through cross-functional cooperation.
People are trained until they can cope with the job.
-2 -1 0 +1 +2
People are trained to do the job well and then to seek further improvement.

CURRENT _____ TWO YEARS - - - - - - - - - -

CHART 3: A COMPARISON OF THE AVERAGE CURRENT QUALITY PRACTICES BETWEEN THE MANUFACTURING AND TOURISM/HOSPITALITY INDUSTRIES IN ALL STATES SURVEYED.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Company goals are known and meaningful.
Performance of section and company not known.
-2 -1 0 •1 •2
Key performance indicators of section and company are known
Issues of quality are delegated.
-2 -1 0 •1 •2
Quality improvement efforts are demonstrated by example.
Improvement efforts are event-driven.
-2 -1 0 •1 •2
Improvement efforts are plan-driven.
Quality is achieving product specifications.
-2 -1 0 •1 •2
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Only specialists involved in improvement.
-2 -1 0 •1 •2
Everyone involved in improvement.
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Standard procedures exist and there is a high degree of compliance
Standards are rarely updated
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Waste is any loss or activity which adds no value
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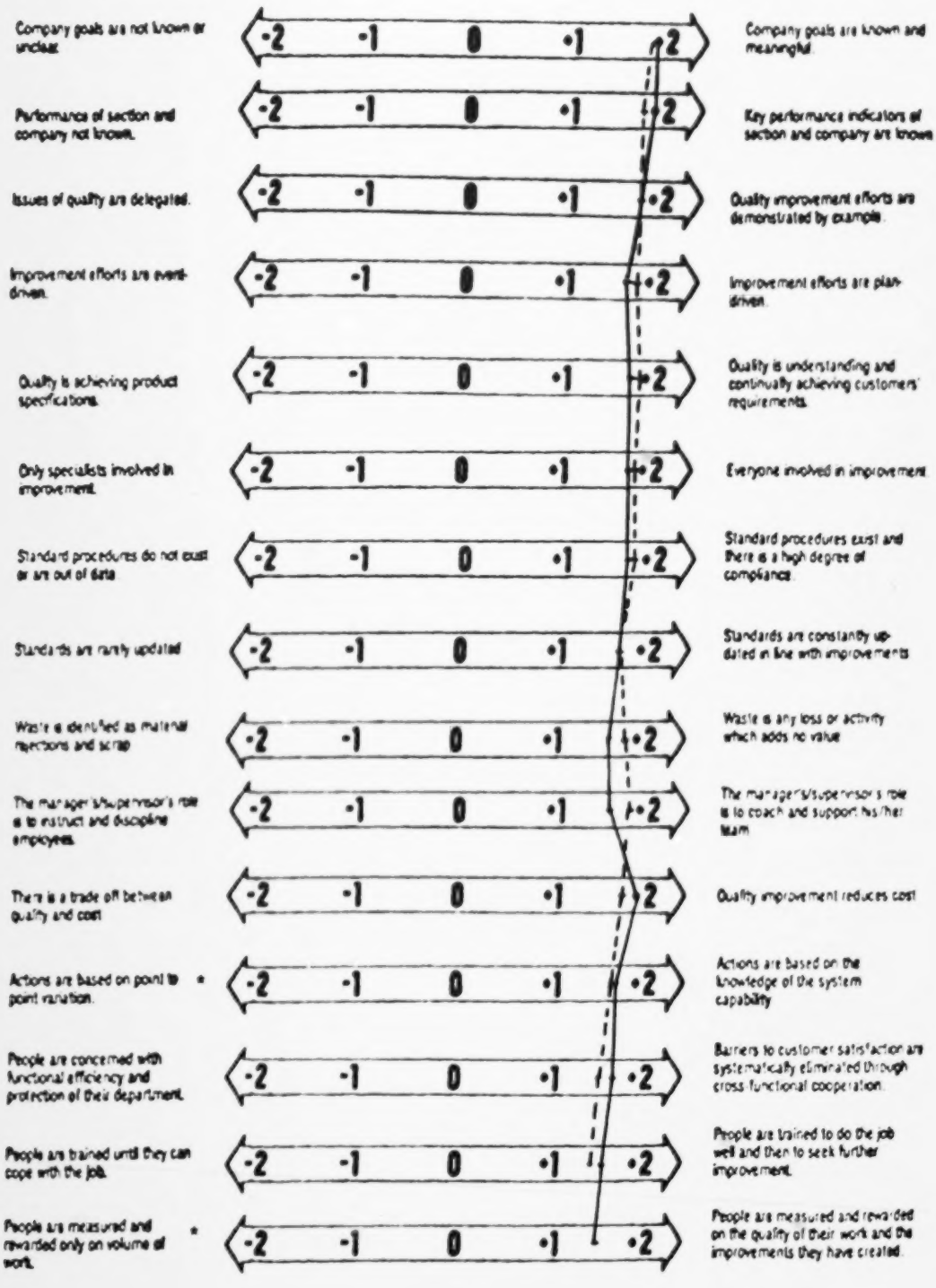
The manager's/supervisor's role is to coach and support his/her team
There is a trade off between quality and cost
-2 -1 0 •1 •2
Quality improvement reduces cost
Actions are based on point to point variation.
-2 -1 0 •1 •2
Actions are based on the knowledge of the system capability
People are concerned with functional efficiency and protection of their department.
-2 -1 0 •1 •2
Barriers to customer satisfaction are systematically eliminated through cross functional cooperation
People are trained until they can cope with the job.
-2 -1 0 •1 •2
People are trained to do the job well and then to seek further improvement.
People are measured and rewarded only on volume of work.
-2 -1 0 •1 •2
People are measured and rewarded on the quality of their work and the improvements they have created.

MANUFACTURING: _____ TOURISM/HOSPITALITY: - - - - - - - - -

* Deleted from Tourism/Hospitality Profile.

CHART C4: A COMPARISON OF THE AVERAGE EXPECTED QUALITY PRACTICES (TWO YEARS HENCE) BETWEEN THE MANUFACTURING AND TOURISM/HOSPITALITY INDUSTRIES IN ALL STATES SURVEYED.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Company goals are known and meaningful
Performance of section and company not known.
Key performance indicators of section and company are known
Issues of quality are delegated.
Quality improvement efforts are demonstrated by example
Improvement efforts are event-driven.
Improvement efforts are plan-driven
Quality is achieving product specifications
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Actions are based on point to point variation.
Actions are based on the knowledge of the system capability
People are concerned with functional efficiency and protection of their department.
Barriers to customer satisfaction are systematically eliminated through cross functional cooperation
People are trained until they can cope with the job.
People are trained to do the job well and then to seek further improvement.
People are measured and rewarded only on volume of work.
People are measured and rewarded on the quality of their work and the improvements they have created

MANUFACTURING: _____ TOURISM/HOSPITALITY - - - - - - - - - -

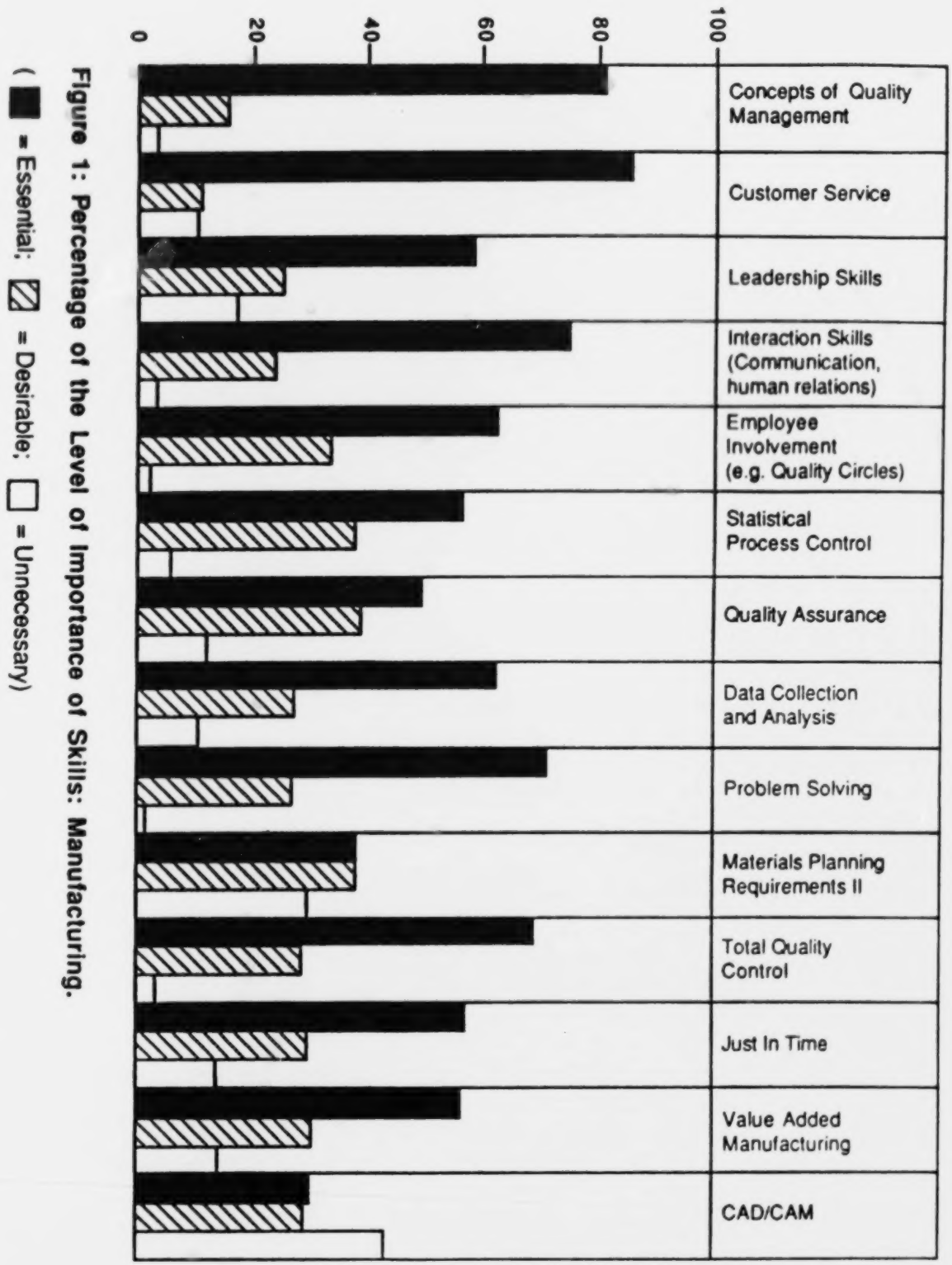

Figure 1: Percentage of the Level of Importance of Skills: Manufacturing.

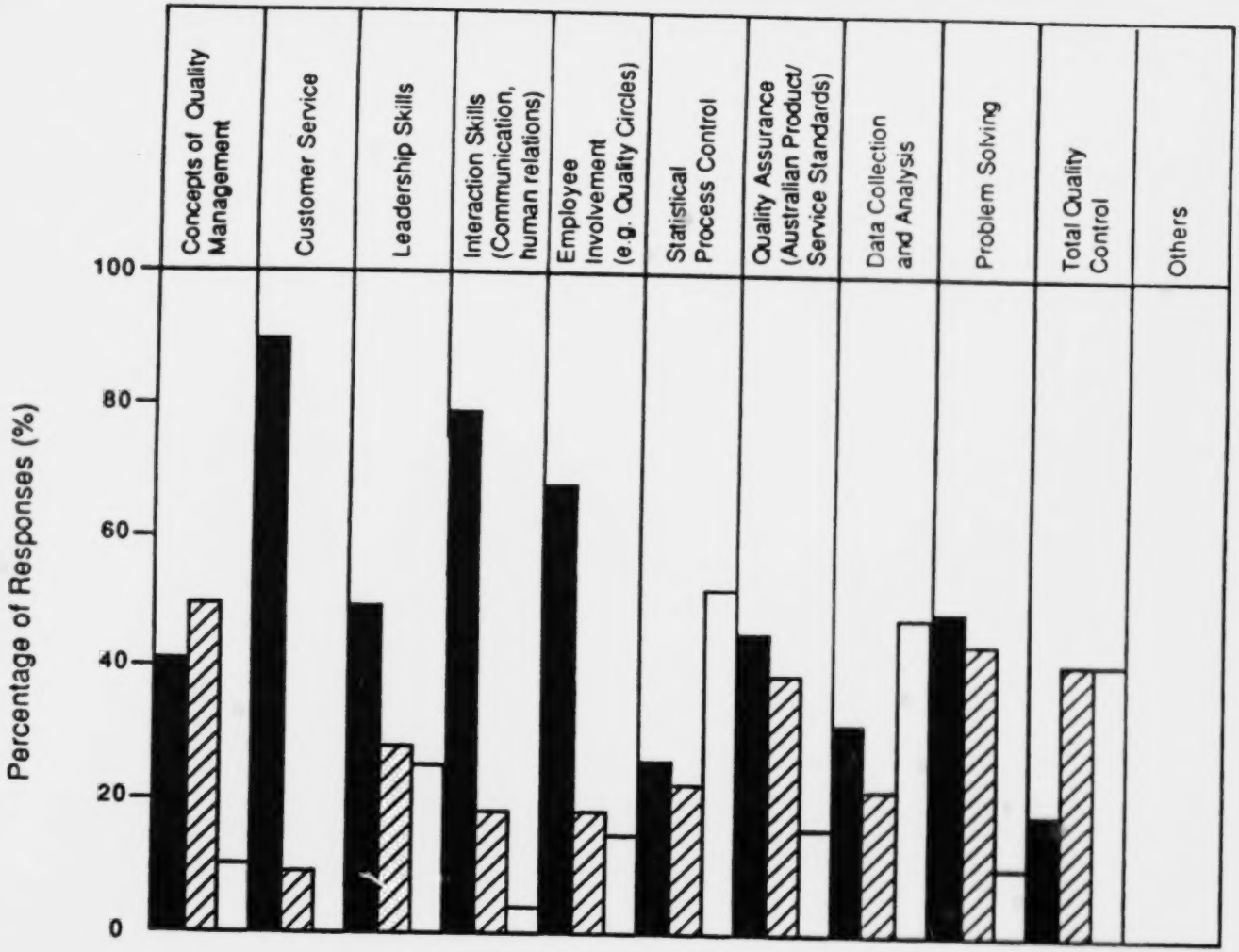

Figure 2: Percentage of the Levels of Importance of Skills: Tourism/Hospitality

(■ = Essential; ▨ = Desirable; □ = Unnecessary)

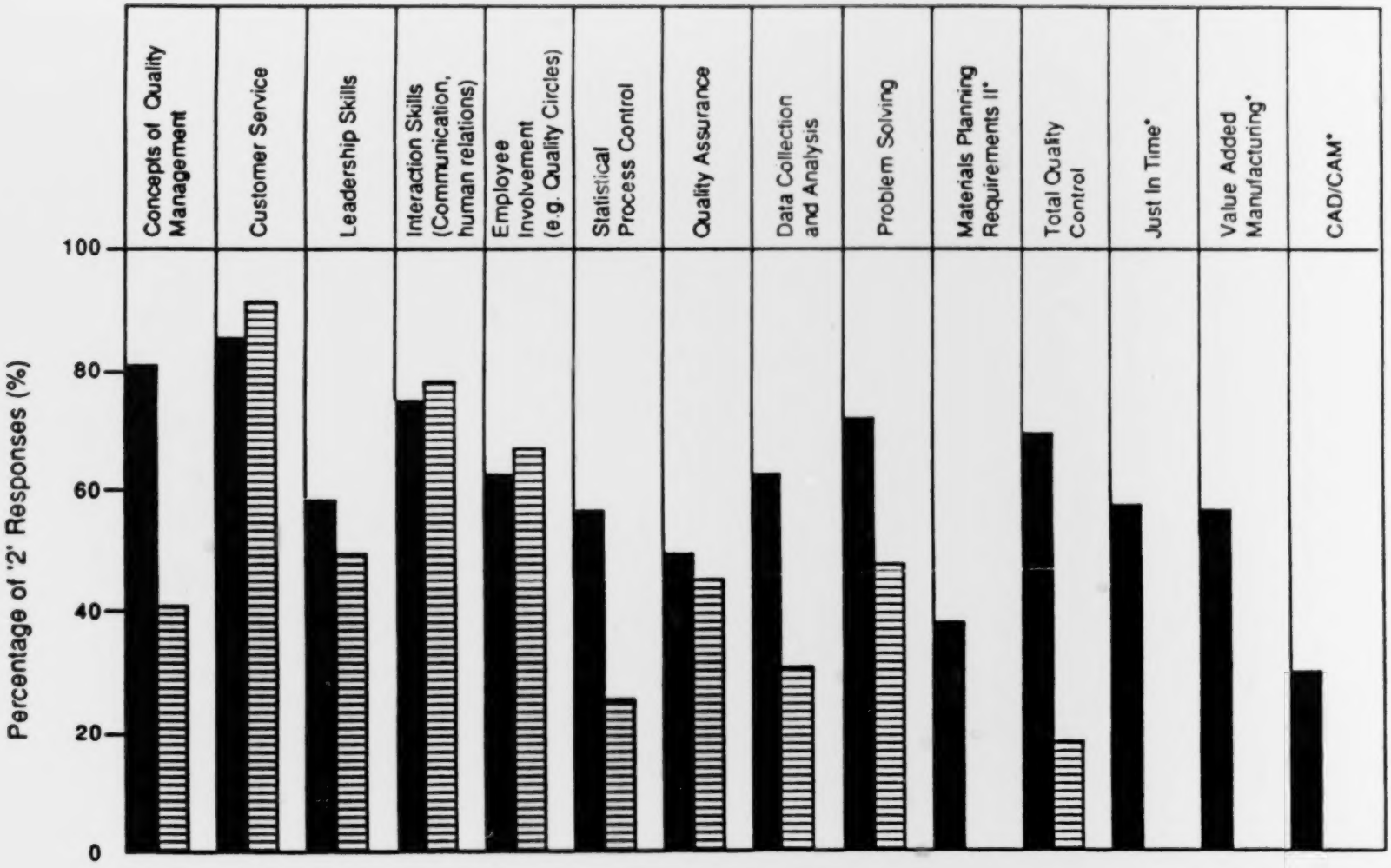

Figure 3: Comparison of Manufacturing with Tourism/Hospitality on percentage of responses regarding skill as 'essential'

(■ = Manufacturing; ▤ = Tourism/Hospitality) *Skill topic not listed in Tourism/Hospitality Survey

CONCLUSIONS

1. There is a need for TAFE curricula to include relevant quality topics, integrated at appropriate stages of the educational programme, in all vocational courses.

2. Staff development in quality is imperative for TAFE lecturing staff.

3. The curriculum development of quality programmes should be carried out with the assistance and guidance of persons with the expertise in modern quality philosophies and practices.

4. The essential components of modern philosophies and practices with respect to quality should include the participation of employers, employees and government working together to achieve quality improvement in the workplace.

5. There is a need for behavioural/attitudinal changes by employers and employees for the success of quality practices in the working environment.

6. The effectiveness of any quality training programme is dependent upon the manner of implementation into the workplace.